CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2002-0103

FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. 99-072 FOR:

UNIVERSAL PROPULSION COMPANY INC.,
GOODRICH CORPORATION,
OEA AEROSPACE, INC.,
OEA, INC.,
AUTOLIV ASP, INC., AND
UNITED STATES DEPARTMENT OF THE AIR FORCE

for the property located at

3530 BRANSCOMBE ROAD
FAIRFIELD
SOLANO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location**: The facility is located at 3530 Branscombe Road (formerly E. T. Road) in Fairfield, Solano County. The site is approximately 2.5 miles south of Travis Air Force Base, and 3.5 miles southeast of the city of Fairfield. The property comprises 531 acres (hereinafter Site), including the leased parcel, and is shown in Figures 1 and 2 (attached), which are made part of this Order.

2. **Site History**: The facility was built in 1956 by the U.S. Army (Army) and was operated by the Army as a NIKE missile battery (NIKE Battery 53) from 1956 until it was decommissioned in 1964. The primary activities during this period included the operation, maintenance, and fueling of NIKE missiles. Chemicals used included nitric acid, fuming red nitric acid, hydrazine, JP fuel, octane, gasoline, 2-propanol, trichloroethylene (TCE), acetone, methyl ethyl ketone, tetrachloroethylene (PCE), polychlorinated biphenyls (PCBs), red phosphorous, waste oils, paints, and ethylene glycol. These chemicals may have been released to the soil and/or groundwater through various use and disposal practices.

   In 1967, Explosive Technology, which was subsequently renamed OEA Aerospace, Inc. (OEAA), purchased the majority of the old NIKE facility and property and leased a 25-acre parcel from the U.S. Department of Defense (DoD). Beginning in 1967 and continuing to the present, explosive tests were routinely conducted for research,

development, and quality assurance testing of explosive devices. Chemicals used included metals (antimony, chromium, copper, lead, nickel, silver) nitrated organics (explosives) including RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine), HMX (octahydro-1,3,5,7-tetranitro-1,3,5,-tetrazocine), dinitrate (PETN), and HNS (1,1-(1,2-ethenediyll)bis-(2,4,6-trinitrobenzene)). Because operations were performed outdoors, these chemicals were likely released to the soil.

Universal Propulsion Company Inc. (UPCO), a subsidiary of Goodrich Corporation, now operates the facility, which includes approximately 506 acres leased from OEA Aerospace, Inc. (OEAA), whose parent company is OEA Inc., and whose parent company is Autoliv ASP, Inc., and 25 acres located at the Launch Site, leased by OEAA from the United States Department of the Air Force. UPCO acquired the manufacturing assets at the Site and a leasehold interest in the OEAA-owned real property, buildings and improvements on December 29, 2000 and has since been the operator of the facility. Travis Air Force Base is currently the property administrator for the 25-acre lease on behalf of the DoD.

The Site history is summarized in Table 2-1.

Table 2-1: OEAA Potrero Hills Site History

Date	Entity	Event	Activity/Operations
1956	U.S. Army/DoD	Acquired 378-acre parcel; built NIKE missile facility	Constructed and operated the Facility area, Launcher area, and Integrated Fire Control area.
1964	U.S. Army	Decommissioned the facility.	Launch area was used for storage of weapons, medical materials, and resources for the hospital at Travis Air Force Base.
1967	Explosive Technology	Purchased majority 275 acres (Facility and ICF areas; not Launch area); leased 25-acre parcel from DoD purchased adjoining properties after 1967 bringing the total properties owned to 506 acres.	Explosive test sites were routinely used for research, development, and quality assurance testing of explosive devices.
1971	OEA, Inc. (OEA)	Purchased Explosive Technology, Inc.	

1989	Explosive Technology, Inc.	Became ET, Inc.
1994	ET, Inc.	Became OEA Aerospace, Inc. (OEAA)
May 2000	Autoliv ASP, Inc.	Purchased OEA and OEAA. Autoliv ASP, Inc. owns the real property and buildings comprising 506 acres; excluding 25 acres owned by DoD.
December 2000	UPCO/Goodrich Corp	Purchased certain assets of OEAA. UPCO/Goodrich owns manufacturing assets at the Site and a leasehold interest in the OEAA-owned real property, buildings and improvements.

During the late 1980s, the U.S. Army Corps of Engineers (CoE) conducted an environmental assessment of 338 acres of the NIKE facility as required by the Superfund Amendments and Reauthorization Act of 1986 (SARA). SARA gives DoD the authority to conduct certain cleanup activities at former DoD sites and using the Defense Environmental Restoration Program (DERP) as the vehicle to accomplish these cleanups. The cleanup of Formerly Used Defense Sites (FUDS) is part of the program, subject to requirements of the Comprehensive Environmental Response, Cleanup, and Liability Act (CERCLA). In October 1990, the CoE determined that the former military activities on the 338 acres did not mandate any additional cleanup action. For the 25-acre DoD Annex, the CERCLA status is deferred until the RWQCB Order(s) are rescinded and the U.S. Air Force can renegotiate with U.S. EPA Regional IX.

3. **Named Dischargers**: UPCO is named as a discharger because it is the current operator of the facility and has operated the facility since December 29, 2000. As current operator, UPCO continues operations that have potential to cause or contribute to the soil contamination on the Site.

OEAA is named as a discharger because it is the owner and a past operator of the facility, and, based on the history of usage of chemicals including explosives, metals, and solvents, which are also found in the soil and groundwater at the Site, has potential to have caused or contributed to the contamination encountered on the Site.

U.S. Department of the Air Force (USAF) is named as a discharger because it is listed as the property administrator of the DoD-owned, 25-acre portion of Site leased to OEAA.

The following identities are also named dischargers because of their affiliations with the past or current operators or owners at the Site (pursuant to Water Code Section 13304):

IDENTITY	REASON FOR BEING NAMED DISCHARGER
Goodrich Corporation	Parent company of UPCO
OEA, Inc. (OEA)	Parent company of OEAA
Autoliv ASP, Inc.	Parent company of OEA and OEAA

The United States has waived sovereign immunity pursuant to CERCLA section 120 (42 U.S.C. 9620), RCRA section 6001 (42 U.S.C. 6961), and Clean Water Act section 313 (33 U.S.C. 1323).

Therefore, UPCO, OEA, OEAA, Autoliv ASP, Inc., Goodrich, and USAF are, hereinafter, jointly referred to as "the dischargers." The dischargers are jointly and severally responsible for meeting the requirements of this order. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the state, the Board will consider adding those parties' names to this order.

4. **Regulatory Status**: The Site was subject to Site Cleanup Requirements (Board Order No. 99-072), adopted September 15, 1999.

5. **Site Hydrogeology**: The Site is situated at the eastern end of the Potrero Hills, which are formed by weather-resistant sandstone beds of the Eocene Markley Formation. The beds dip steeply in an arcing pattern away from the Site, reflecting an east-dipping anticline. The depth to shallow groundwater beneath the Site is believed to be highly variable and dependent upon topography and elevation. The general flow of groundwater is controlled by topography. Usable aquifers are believed to be relatively deep, and it is inferred that shallow perched groundwater would likely be encountered across much of the Site. These shallow perched zones are most likely recharged during the rainy season and appear to sustain flow in the on-Site drainages during the dry summer months. Shallow groundwater has been observed to seep from the cut banks of drainage courses at lower elevations within the facility. One natural spring is located within the limits of the facility, about 1,350 feet east of the upper area. Surface drainage is controlled by the sandstone beds, and is generally radial, away from the center of the Site toward the north, east, and south.

Water in the shallow water-bearing zone is not used for human consumption. Drinking water at the facility is obtained from a well drilled in 1975 that is more than 200 feet deep, and is tested regularly in accordance with requirements of the Department of Health Services. Two domestic wells and another spring are located offsite, about 600 feet northeast of the Launch Area. The wells are 120 and 180 feet deep, respectively.

The facility is surrounded by sloughs and marshes, which are part of the San Francisco Bay estuary system.

6. **Remedial Investigation**: Seven areas were identified for risk-based assessment due to historic activities at the Site: Launch Area (former NIKE missile launch area where MAW and Braider Building test sites are located), East Launch Area (Assembly Building, Remote Saw Area, Mixer Shed), Upper Test Site Area, Southern Downgradient Area (southern downslope undeveloped areas, including OEA Lake), Marsh Area (surrounding marshes), Eastern Downgradient Area (eastern downslope undeveloped areas), and Main Area (Building 7 Test Site and former lead smelting area). A risk-based approach was used for conducting an investigation and to evaluate risks associated with potential exposure of human and ecological receptors to contaminants at the Site. The nature and extent of contamination was delineated, and down-slope areas were characterized to evaluate chemical attenuation away from areas where explosives and other chemicals were used. The characterization included surface and subsurface soil samples, sediment samples, and surface water and ground water samples.

Soil samples were analyzed for mercury, silver, chrome, nickel, antimony, copper, and lead. All samples for metals were extracted by USEPA method 3050A and analyzed using EPA Test Method 6010A series. The analytical results indicated elevated concentrations of metals in surface soils, as well as in shallow depths at the test sites. Concentrations generally decrease with depth. The highest concentrations of lead were detected at the MAW Test Site and the Braider Building (37,000 and 17,000 mg/kg, respectively). Building 7 also had elevated lead, with a maximum concentration of 17,000 mg/kg. The data indicated that lead is the only metal detected at the Site above Preliminary Remediation Goals (PRGs), primarily at the MAW Test Site. The maximum background concentration for lead at the Site is about 13 mg/kg as reported by OEAA. Travis Remedial Investigation documents report a lead background level of 61.2 mg/kg.

Soil samples were also analyzed for explosives, including HMX (octahydro-1,3,5,7-tetranitro-1,3,5-tetrazocine) and RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine). Combined HMX and RDX concentrations were detected up to 920 mg/kg and were localized near the centers of lead-impacted areas. Higher concentrations of explosives seem to be located near the soil surface.

Groundwater beneath the Site contains 1,1-dichloroethene (1,1-DCE) in concentrations up to 66 ug/L, and perchlorate in concentrations of up to 350 ug/L. Further

characterization is required to confirm boundaries and stability of the plumes. The California primary maximum contaminant level (MCL) for 1,1-DCE in drinking water is 6 ug/L, and for perchlorate the California Department of Health Services (DHS) action level is 18 ug/L. Perchlorate is a primary ingredient in solid propellant for rocket motors and pyrotechnic mixes.

7. **Adjacent Sites**: There are no contaminated sites immediately adjacent to this Site.

8. **Interim Remedial Measures**: In 1999, OEAA installed erosion control systems in areas of the Site where the soil was found to contain high levels of lead, in order to prevent lead-contaminated soil from washing downgradient with surface water runoff. Fences and cattle guards were installed in 1999 to prevent grazing cattle from becoming exposed to lead-contaminated soil.

9. **Feasibility Study**: In 2002, the dischargers submitted a report describing the preliminary options reviewed for soil remediation of the Site. These included a no-action alternative, soil stabilization, removal and disposal, capping of impacted soil with asphalt, phytoremediation, and land-use controls. Of these, soil removal, stabilization, and disposal are considered effective for the long-term protection of human health and the environment. Further characterization of groundwater is needed to evaluate the need for groundwater remediation. At this time, it appears a combination of long-term monitoring and institutional constraints is the most viable remedial alternative for impacts to groundwater. Other remedies that may be considered include monitored natural attenuation, enhanced bioremediation, and source removal.

10. **Cleanup Plan**: The dischargers propose to address elevated levels of lead and other COCs in soil by excavating, treating, and disposing of soil contaminated by concentrations of lead in excess of 300 mg/kg. Under this plan, surface water would be monitored to verify that excavation was successful in preventing lead from entering surface water bodies. In addition, surface water would be monitored to verify that excavation of lead-contaminated soil was effective in protecting waters of the state.

Table 10.1: Cleanup Levels

Chemical	Maximum Concentration (mg/kg)	Soil Background Concentration (mg/kg)	Soil Cleanup Level (mg/kg)[1]
Antimony	983	12.4	43.75
Copper	14,000	91	443.9
Lead	37,000	13	300
HMX	100	n/a	2.2
RDX	127.6	n/a	4.5

[1] Based on terrestrial food chain

Table 10.2: Selected Remedial Activities

Location	COPCs	Medium	Selected Remedial Activity
Launch Area	Lead, antimony, explosives	Soil	Excavation, treatment, disposal of soil exceeding 300 mg/kg lead
East Launch Area	Lead, explosives	Soil	Excavation, treatment, disposal of soil exceeding 300 mg/kg lead
	Perchlorate	Groundwater	Groundwater monitoring and cleanup, if needed
Upper Test Site Area	Lead, copper, explosives	Soil	Excavation, treatment, disposal of soil exceeding 300 mg/kg lead
Southern Downgradient Area	Lead	Stormwater	Source removal; erosion and sediment control; monitoring
Main Area	Lead	Soil	Excavation, treatment, disposal of soil exceeding 300 mg/kg lead
	VOC	Groundwater	Groundwater characterization and cleanup, if needed

11. **Risk Assessment**: Ecological receptors were emphasized because minimal human health risks were identified at the screening level. Because the ongoing uses at the Site are industrial, industrial cleanup levels are appropriate for reduction of human exposure to chemicals of concern (COC). The ecological risk assessment report identified constituents of potential concern (COPCs) that could pose a risk to ecological receptors. The primary COC is lead in soil, which presents risk to upland terrestrial and avian wildlife. Other metals, including copper, antimony, and barium have been detected in soil, as have low concentrations of explosive compounds. Other COPC are either located within areas of lead concentrations exceeding risk-based cleanup levels, or appear to be related to natural sources.

Volatile organic compounds (VOC) have been detected in shallow groundwater in the central portion of the Site. The VOC appear to be related to current or historic product coating processes, and extend laterally several hundred feet downgradient. Perchlorate has also been detected in low concentrations in shallow groundwater in the eastern portion of the Site.

In general, the ecological risk assessment resulted in higher calculated risks for ecological receptors than for human receptors, in part due to the current industrial use of the Site. If the ecological risks are addressed, then human health risks will be reduced to acceptable levels, since ecological risks are more conservative than human-health risks for industrial use.

Based on the risk-based investigation and additional investigation at the Site, the following chemicals are considered ecological risk drivers for the Site: lead, HMX (an explosive compound); RDX (an explosive compound), copper, antimony, perchlorate, and 1,1-DCE.

HMX and RDX migration to groundwater and surface water appear to be significantly retarded by their low solubility in water. This is evidenced by concentrations generally diminishing to non-detectable concentrations within two feet below the ground surface. In addition, detectable concentrations of HMX and RDX, copper, and antimony are co-located with high concentrations of lead. This means that site-specific cleanup goals for lead will address risks associated with explosives and the other COPC metals.

In groundwater, perchlorate and 1,1-DCE have been identified in concentrations exceeding the California MCL or DHS action level and pose toxicity risks. Immediate cleanup to MCLs or action levels is not necessary because shallow groundwater is not currently used for drinking water at the Site. Future use of shallow groundwater for drinking or irrigation is not likely because shallow groundwater is perched and not expected to sustain usable flow rates. To ensure protection of the deeper drinking water aquifer, cleanup of perchlorate and 1,1-DCE may be required, based on the results of further groundwater characterization. The existing on-Site drinking water well is approximately 215 feet deep and is monitored regularly. No groundwater contamination has been detected in this well.

No ecological risks were identified in the Main Area, due to an absence of habitat for sensitive wildlife. Soil remediation in the Main Area will limit perceived potential human health risks to site workers.

Due to excess risk that may be present at the Site pending full remediation, institutional constraints may be appropriate to limit on-Site exposure to acceptable levels. Institutional constraints include a deed restriction that notifies future owners of sub-surface contamination, prohibits residential use, and prohibits the use of shallow groundwater beneath the Site as a source of drinking water until cleanup standards are met.

12. Basis for Cleanup Standards

a. **General**: State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. The previously cited cleanup plan confirms the Board's initial conclusion that background levels of water quality cannot be restored. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

b. **Beneficial Uses**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The State Water Resources Control Board and the Office of Administrative Law approved the revised Basin Plan on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

- Municipal and domestic water supply
- Industrial service water supply
- Agricultural water supply

Existing uses of groundwater include a drinking water supply well located on the Site that is approximately 215 feet deep. There are no known domestic or agricultural wells downgradient of the Site.

Surface water runoff discharges to wetlands adjacent to Suisun Marsh. Existing and potential beneficial uses of this surface water include:

- Freshwater replenishment
- Water contact and non-contact recreation
- Wildlife habitat
- Fish migration and spawning
- Estuarine habitat
- Preservation of rare and endangered species

c. **Basis for Groundwater Cleanup Standards**: The groundwater cleanup standards for the Site are based on applicable water quality objectives and are the more stringent of EPA and California primary MCLs. Cleanup to this level, if required, will result in acceptable residual risk to human and ecological receptors.

d. **Basis for Soil Cleanup Standards**: The soil cleanup standards for the Site are 300 mg/kg for lead, 43.75 mg/kg for antimony, 443.9 mg/kg for copper, 2.2 mg/kg for HMX, and 4.5 mg/kg for RDX. These standards are based on conservatively estimated, no observed adverse effects level (NOAEL) and low observed adverse effects level (LOAEL) hazard quotients in excess of 1.0 for protection of birds and mammals (terrestrial food chain). For other metals, the cleanup goal is to attain background level concentration of metals. Cleanup to these levels is intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to human and ecological receptors.

13. **Future Changes to Cleanup Standards**: The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the Site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this Site may not be possible. If full restoration of beneficial uses is not technologically or economically achievable within a reasonable period of time, then the dischargers may request modification to the cleanup standards or establishment of a containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide that further cleanup actions should be taken.

14. **Reuse or Disposal of Extracted Groundwater**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

15. **Basis for 13304 Order**: The dischargers have caused or allowed waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

16. **Cost Recovery**: Pursuant to California Water Code Section 13304, the dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

17. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

18. **Notification**: The Board has notified the dischargers and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup that will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. CLEANUP PLAN AND CLEANUP STANDARDS

1. **Implement Cleanup Plan**: The dischargers shall implement the cleanup plan described in finding 10.

8. **Groundwater Cleanup Standards**: The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program, unless the subsequent groundwater characterization demonstrates that full restoration of groundwater beneficial uses is not possible or is technically or economically impractical as described in Water Board Finding Number 13 (Future Changes to Cleanup Standards):

Constituent	CA Standard (ug/l)	Basis
1,1-DCE	6 ug/l	CA DHS Maximum Contaminant Level
Perchlorate	18 ug/l	CA DHS Action Level

3. **Soil Cleanup Standards**: Soil cleanup standards of 300 mg/kg for lead, 43.75 mg/kg for antimony, 443.9 mg/kg for copper, 2.2 mg/kg for HMX, and 4.5 mg/kg for RDX shall be met in all on-Site vadose-zone soils.

C. TASKS

1. **ADDITIONAL GROUNDWATER CHARACTERIZATION**

COMPLIANCE DATE: November 29, 2002

Submit a workplan acceptable to the Executive Officer for installation of groundwater monitoring wells to characterize groundwater plumes beneath the Main Area and the East Launch Area. The workplan should describe all significant implementation steps and should include an implementation schedule.

2. **REMEDIAL ACTION IMPLEMENTATION PLAN FOR SOIL**

COMPLIANCE DATE: May 4, 2003

Submit a technical report acceptable to the Executive Officer that documents the remedial alternative technology screening process, additional data collection, and selected alternatives, and having sufficient detail to ensure that the field work is efficiently and effectively implemented. The report should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative. The screening should be consistent with the

guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). The Remedial Action Implementation Plan (RAIP) shall provide sufficient quality control measures that demonstrate to the RWQCB that cleanup standards are met. The RAIP shall include protocols to control operations, provide quality control, and minimize the potential for impacts to the Site and facility operations. The RAIP may include elements for traffic control, dust control, air monitoring, excavation approach, confirmation sampling, and site restoration.

3.. **REMEDIAL ACTION COMPLETION REPORT FOR SOIL**

COMPLIANCE DATE: November 30, 2003

Submit a technical report acceptable to the Executive Officer documenting the implementation of the approved remedial technology, including regulatory permitting documentation, variance reporting, confirmation sampling results, air monitoring data, and completion of site restoration.

4. **STORMWATER QUALITY REPORTING**

COMPLIANCE DATE: July 30, 2004 and July 29, 2005[1]

Submit two annual Stormwater quality reports acceptable to the Executive Officer documenting the effectiveness of the remedy in terms of continued compliance with cleanup standards that have been established for the Site. The report shall demonstrate improvement in stormwater quality compared to historic data and that potential ecological receptors at the Site are not subjected to excess risk.

5. **ADDITIONAL GROUNDWATER CHARACTERIZATION REPORT**

COMPLIANCE DATE: August 15, 2004

Submit a technical report acceptable to the Executive Officer characterizing the groundwater plumes beneath the Main Area and East Launch Area. Groundwater conditions shall be evaluated with respect to source, migration characteristics, chemical fate, potential exposure pathways, and potential risks, if any. The report

[1] These compliance dates allow for completion of reporting under the Site operator's Industrial Stormwater General Permit and incorporation of these data into the reporting to the Board.

shall include discussions of Site use history, chemical source evaluation, assessment of potential receptor populations, chemical fate characteristics, groundwater flow characteristics, and plume extent. If remedial action is required for groundwater, the report shall contain a feasibility study evaluating alternative remedial actions, recommended final remedial actions and cleanup standards, and a schedule for implementation of the proposed remedial action and submittal of the remedial action completion report. If appropriate, the report shall provide sufficient detail to ensure that any required groundwater remediation is efficiently and effectively implemented, sufficient quality control measures that demonstrate to the RWQCB that cleanup standards are met, and protocols to control operations, provide quality control, and minimize the potential for impacts to the Site and facility operations.

6. **PROPOSED INSTITUTIONAL CONSTRAINTS**

COMPLIANCE DATE: October 15, 2004

Submit a technical report acceptable to the Executive Officer documenting procedures to be used by the dischargers to prevent or minimize human exposure to soil and groundwater contamination prior to meeting cleanup standards. Such procedures shall include a deed restriction that notifies future owners of sub-surface contamination, prohibits residential use, and prohibits the use of shallow groundwater beneath the Site as a source of drinking water until cleanup standards are met if property conditions at time of transfer do not meet residential PRGs, MCLs, or action levels.

7. **IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS**

COMPLIANCE DATE: 60 days after Executive Officer approval of the technical report defined in Task 6

Submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

8. **REMEDIAL ACTION COMPLETION REPORT**

COMPLIANCE DATE: 60 days after completion of remedial action

Submit a technical report acceptable to the Executive Officer documenting the implementation of the approved remedial technology, including regulatory permitting documentation, variance reporting, and confirmation sampling results.

9. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved cleanup plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

10. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information, which bears on the approved cleanup plan and cleanup standards for this Site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved cleanup plan or cleanup standards.

11. **Delayed Compliance**: If dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the dischargers shall promptly notify the Executive Officer and the Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M**: The dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The dischargers shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Board-

managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the dischargers over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the dischargers shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the dischargers.

5. **Self-Monitoring Program**: The dischargers shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-Site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

a. John Lucey
U. S. Environmental Protection Agency, Region IX
75 Hawthorne Street, H-9-1
San Francisco, CA 94105-3901

b. Jose Salcedo
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826-3268

c. Department of the Air Force
Attn: Melissa Malakos
60 CES/CEVC
580 Hickam Avenue, Building #246
Travis Air Force Base, CA 94535-2176

d. Dennis Kalson
Solano County Department of Environmental Management
601 Texas Street,
Fairfield, CA 94533-6301

The Executive Officer may modify this distribution list as needed.

9. **Reporting of Changed Owner or Operator**: The dischargers shall file a technical report on any changes in Site occupancy or ownership associated with the property described in this Order within 60 days of such change.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the dischargers shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order supercedes and rescinds Order No. 99-072.

112. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 16, 2002.

Loretta K. Barsamian
Executive Officer

FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

Attachments: Site Map
Self-Monitoring Program

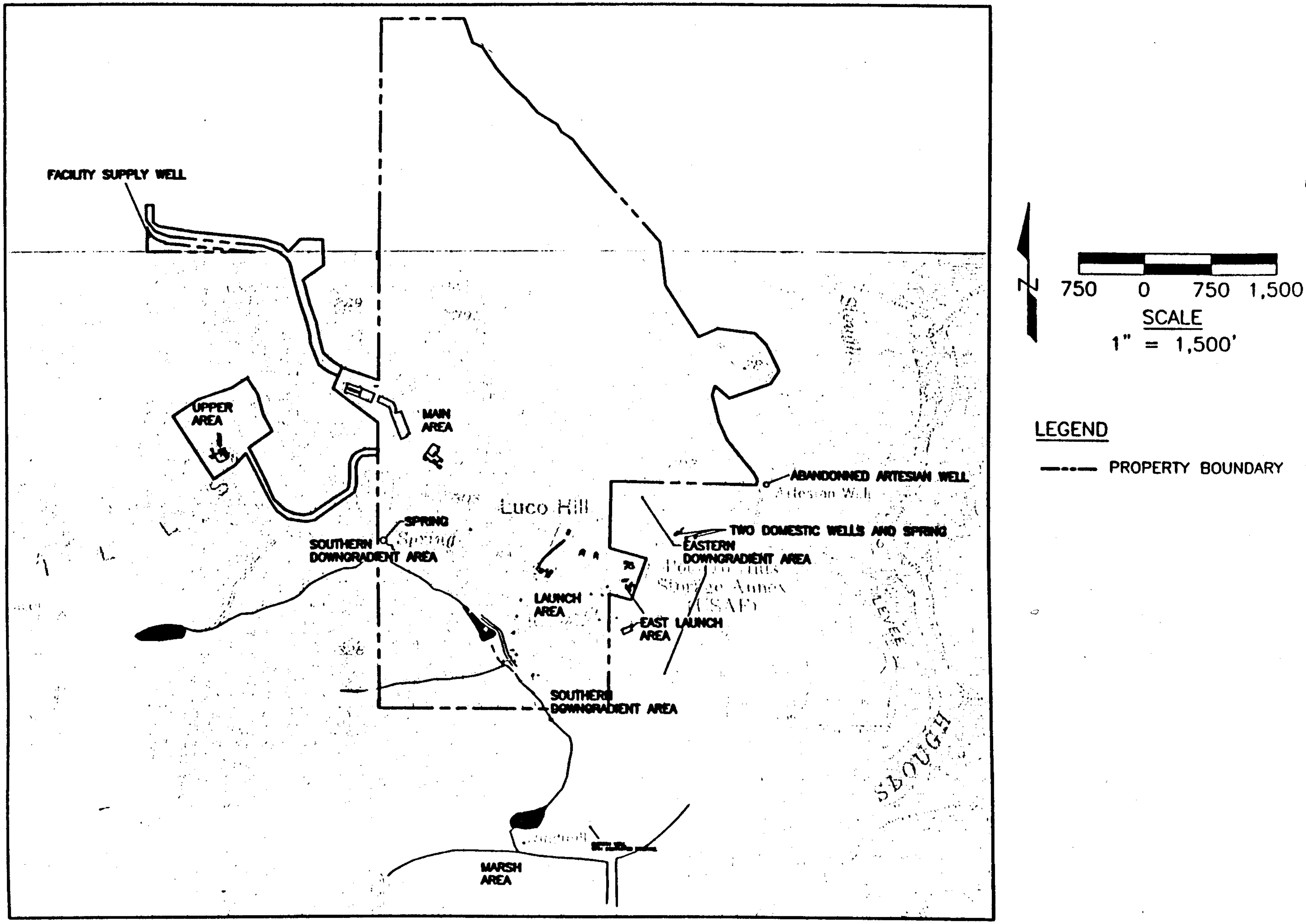

Figure 2
GEOMORPHIC FEATURES AND AREA DESIGNATIONS
OEA Aerospace, Inc.
3530 Branscombe Road
Solar 'inty

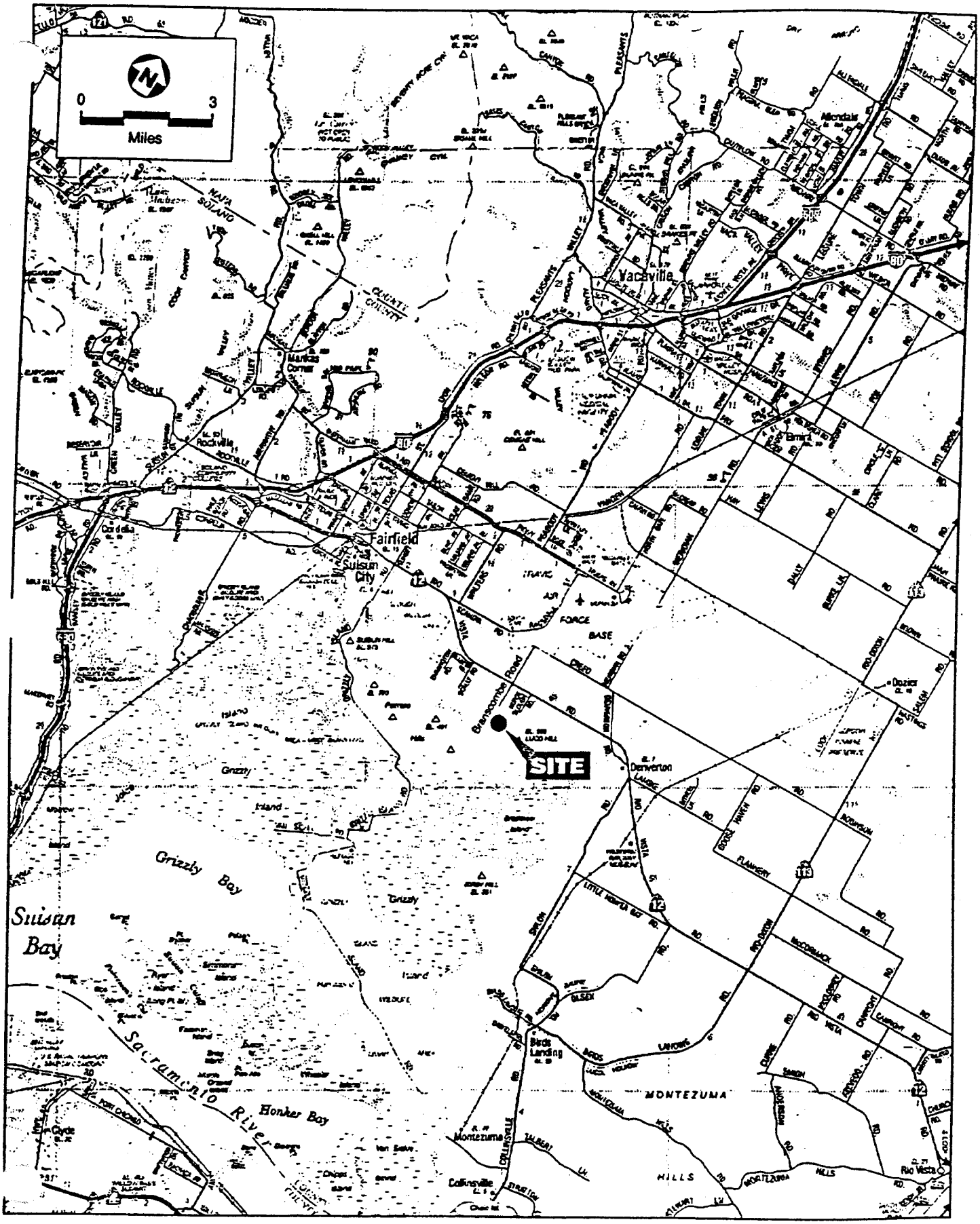

Figure 1
Site Location Map
OEA Aerospace, Inc.
3530 Branscombe Road
Solano County, CA

CDM Camp Dresser & McKee

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

UNIVERSAL PROPULSION COMPANY INC.,
GOODRICH CORPORATION,
OEA AEROSPACE, INC.,
OEA, INC.
AUTOLIV ASP, INC., AND
UNITED STATES DEPARTMENT OF THE AIR FORCE

for the property located at

3530 BRANSCOMBE ROAD
FAIRFIELD
SOLANO COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program (SMP) pursuant to Water Code Sections 13267 and 13304. This SMP is intended to document compliance with Board Order No. R2-2002-0103 (site cleanup requirements).

2. **Monitoring**: The dischargers shall measure groundwater elevations semi-annually in all monitoring wells, and shall collect and analyze representative samples of groundwater using EPA Method 8260B or equivalent for VOCs and EPA Method 314.0 or equivalent for perchlorate. The dischargers shall sample any new monitoring or extraction wells semi-annually and analyze groundwater samples for the same constituents. The dischargers may propose changes in the monitoring schedule; any proposed changes are subject to Executive Officer approval. In order to consider monitored natural attenuation as a remedial alternative, the appropriate chemical data must be obtained and reported.

3. **Semi-Annual Monitoring Reports**: The dischargers shall submit semi-annual monitoring reports to the Board no later than 30 days following the end of the period. The first semi-annual monitoring report shall be due on December 15, 2002. The reports shall include:

    a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the dischargers' principal executive officers, or their respective,

duly-authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in each report.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in each report. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the Site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the period. Historical mass removal results shall be included in each report.

e. Status Report: The semi-annual report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following period.

5. **Violation Reports**: If the dischargers violate requirements in the Site Cleanup Requirements, then the dischargers shall notify the Board office by telephone as soon as practicable once the dischargers have knowledge of the violation. Board staff may, depending on violation severity, require the dischargers to submit a separate technical report on the violation within five working days of telephone notification.

6. **Other Reports**: The dischargers shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

7. **Record Keeping**: The dischargers or their respective agents shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

8. **SMP Revisions**: Revisions to the SMP may be ordered by the Executive Officer, either on his/her own initiative or at the request of the dischargers. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on October 16, 2002.

Loretta K. Barsamian
Executive Officer